SAT Report

PMN Number: **P-16-0510**
SAT Date: **8/19/2016**
Print Date: **10/3/2017**

Related cases:

Health related cases: [redacted]
Ecotox related cases: [redacted]

Concern levels:

Type of Concern:	Health	Eco	Comments
Level of Concern:	1-2	1-2	

Persistence	Bioaccum	Toxicity	Comments
3	1	2	

Exposure Based Review:

Health: No
Ecotox: No

Routes of exposure:

Health: Dermal Drinking Water Inhalation
Ecotox: All releases to water
Fate: ;

Keywords:

Keywords: MUTA; DEVEL; IRR-MM; REPRO NEURO; ONCO

Summary of Assessment:

Fate:

Fate Summary: P-16-0510

FATE: MW = 1009 with 8% < 500 and 32% < 1000
Solid
S = 8 mg/L at 25 °C (E, Typical)
VP < 1.0E-6 torr at 25 °C (E)
BP > 400 °C (E)
H < 1.00E-8 (E)
POTW removal (%) = 90 via sorption and possible partial biodeg
Time for complete ultimate aerobic biodeg = mo
Sorption to soils/sediments = v.strong
PBT Potential: P3B1

*CEB FATE: Migration to ground water = negl

Overall wastewater treatment removal is 90% via sorption.
Sorption to sludge is strong based on high molecular volume.
Air Stripping (Volatilization to air) is negligible based on high molecular volume.
Removal by biodegradation in wastewater treatment is negligible based on high molecular volume.
Destruction of the substance in wastewater treatment is partial based on high molecular volume.
The aerobic aquatic biodegradation half-life (ultimate) is months based on high molecular volume.
The aerobic aquatic biodegradation half-life (primary) is weeks to months based on high molecular volume.
The anaerobic aquatic biodegradation half-life is months to greater than months based on high molecular volume.
Sorption to soil and sediment is very strong based on high molecular volume.
Migration to groundwater is negligible based on high molecular volume.
PMN Material:
High Persistence (P3) is based on expected environmental partitioning and high molecular volume.
Low Bioaccumulation potential (B1) is based on high molecular volume.

Health:

Hazard Assessment: Absorption of the LMW (8% < 500, 32% < 1000) is good through the lungs based on physical/chemical properties. Expect poor absorption through the skin and GI tract for the low molecular weight fraction (8% < 500, 32% < 1000) based on physical/chemical properties. There is concern for mutagenicity, developmental toxicity, reproductive effects and neurotoxicity and a marginal concern for oncogenicity based on the acylamide fuctional groups.

Original Test Data Text: Submitted test data:
(-) gene mutation assay with and without activation;
inconclusive in vitro dermal sensitization assays (2 total).

Ecotox:

Test Organism	Test Type	Test End Point	Predicted	Measured	Comments
fish	**96-h**	**LC50**	>100/>100		PMN MWn/LMW as drawn
daphnid	**48-h**	**LC50**	>100/>100		PMN MWn/LMW as drawn
green algal	**96-h**	**EC50**	>100/1.7		PMN MWn/LMW as drawn
fish	**_**	**chronic value**	>10/>10		PMN MWn/LMW as drawn
daphnid	**_**	**chronic value**	>10/2.7		PMN MWn/LMW as drawn
algal	**_**	**chronic**	>10/0.43		PMN MWn/LMW as drawn

		value			
Sewage Sludge	**3-h**	**EC50**	**_**		
Sewage Sludge	**_**	**Chronic Value**	**_**		

Ecotox Values Comments: Predictions are based on SARs for nonionic polymers; SAR chemical class = Polymers-nonionic-acrylamides; MW 1009 with 8%<500, 32% < 1000; S = 1085 mg/L at 20 C (P); solid with unknown mp (P); effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0;

Environmental Hazard: Environmental hazard is relevant to whether a new chemical substance is likely to present unreasonable risks because the significance of the risk is dependent upon both the hazard (or toxicity) of the chemical substance and the extent of exposure to the substance. EPA estimated environmental hazard of this new chemical substance using hazard data on analogous chemicals. Based on these estimated hazard values from the analogous chemicals, EPA concludes that this chemical substance has low to moderate environmental hazard for the PMN with average molecular weight to the low molecular weight as drawn, respectively.

· Substance falls within the TSCA New Chemicals Categories of Cationic Nonionic Polymers and Acrylamides.
· SAR chemical class of polymer-nonionic-acrylamide.
· Moderate hazard based on acute and chronic concentrations of concern of 430 ppb and 43 ppb, respectively, for the low molecular weight as drawn.
· Low hazard based on acute and chronic concentrations of concern of 20,000 ppb and 1000 ppb, respectively, for the PMN with average molecular weight.

Factors	**Values**	**Comments**
Assessment Factor	4/10	acute/chronic
Concentration of Concern (ppb) Acute	430	for the LMW as drawn; CoC is 20000 ppb for PMN with MWn
Concentration of Concern (ppb) Chronic	43	for the LMW as drawn; CoC is 1000 ppb for PMN with MWn
SARs	nonionic polymers	
SAR Class	polymer-nonionic-acrylamide	
TSCA New Chemcial Category	Acrylamides; Nonionic Polymers	

Ecotox Factors Comments:

SAT Chair: [redacted]
Fate [redacted] **Ecotox assessor:** [redacted] **Health assessor:** [redacted]